

WHAT IS CLAIMED IS:

1. A piezoelectric resonator comprising:  
a piezoelectric resonator element comprising a piezoelectric body having an electrode formed on a surface of the piezoelectric body;

a supporting member supporting said piezoelectric resonator element; and

a plurality of leads mechanically connecting said piezoelectric resonator element to said supporting member and permitting electrical connection thereof;

wherein each of said leads is provided with a flat leading end portion which opens in substantially a U shape toward a leading end, connectable substantially in parallel with said electrode, and a connecting layer is formed with a conductive resin between the leading end portion and said electrode, and

wherein said piezoelectric resonator element is supported by said leads so that a gap is formed between said supporting member and said piezoelectric resonator element.

2. The piezoelectric resonator according to claim 1, wherein said resonator element is attached to said leads to an end of the substantially U-shaped opening of said leading end portion on a side facing said supporting member, so that an edge of said piezoelectric resonator

element on the side facing said supporting member may be positioned at said end of the substantially U-shaped opening.

3. The piezoelectric resonator according to claim 1, wherein said substantially flat leading end portion has a tapered cross-section converging toward the leading end thereof.

4. The piezoelectric resonator according to claim 1, comprising a temporary fixing layer made of a UV-setting type resin coated thereunto so as to temporarily fix the leading end portion of said leads and said piezoelectric resonator element prior to forming said connecting layer, and

wherein said connecting layer is formed with a conductive resin at least injected into a gap between said leading end portion and said electrode.

5. The piezoelectric resonator according to claim 4, wherein said temporary fixing layer is formed on a side facing an adjacent lead.

6. The piezoelectric resonator according to claim 1, wherein, prior to connecting said leading end portion and said electrode, said connecting layer is formed with a

conductive resin coated onto said leading end portion or said electrode.

7. The piezoelectric resonator according to claim 1, wherein said connecting layer is provided with a reinforcing layer of a conductive resin or a non-conductive resin coated so as to cover at least said connecting layer and the leading end portion of said leads.

8. A method for manufacturing a piezoelectric resonator comprising:

when attaching a piezoelectric resonator element comprising a piezoelectric body having an electrode formed thereon, to a plurality of leads which connect said piezoelectric resonator element mechanically to a supporting member and permit electrical connection thereof, a connecting step of:

forming a connecting layer of a conductive resin in a gap between said electrode and flat leading end portions, connectable substantially in parallel with said electrode, opening in substantially a U shape toward a leading end thereof.

9. The method for manufacturing a piezoelectric resonator according to claim 8, wherein said connecting step comprises:

a first step for forming a temporary/ fixing layer by coating a UV-setting type resin onto at least a part of the leading end portions of said leads and said piezoelectric resonator element; and

a second step for forming the connecting layer by injecting the conductive resin at least into the gap between said electrode and said leading end portions.

10. The method for manufacturing a piezoelectric resonator according to claim 9, wherein, in said first step, said UV-setting type resin is coated onto a side facing an adjacent lead.

11. The method for manufacturing a piezoelectric resonator according to claim 8, wherein, in said connecting step, prior to connecting said leading end portions to said electrode, said connecting layer is formed with the conductive resin coated onto said leading end portions or said electrode.

12. The method for manufacturing a piezoelectric resonator according to claim 8, wherein said method includes a reinforcing step of forming a reinforcing layer with a conductive resin or a non-conductive resin coated so as to cover at least said connecting layer and the leading end portions of said leads.

13. The method for manufacturing a piezoelectric resonator according to claim 12, wherein said conductive resin or non-conductive resin used in said reinforcing step has a higher viscosity than that of said conductive resin used in said connecting step.

14. A piezoelectric resonator unit having the piezoelectric resonator according to claim 1 and a hollow protector, wherein said piezoelectric resonator is inserted, and sealed by said supporting member and said protector.